

## Abstract

The object of this research is to discover correlation between certain metrics of air pollution in the Los Angeles county and the California Cardiovascular disease death rates from 1980-2009. A couple of methods will be used to observe this hypothesized correlation. The first will be recording daily air quality data from the Environmental Protection Agency (EPA) website. The second will consist of taking a look at long-term air quality data in the Los Angeles county from 1980-2012. The considered metrics include Carbon Monoxide (CO), PM<sub>2.5</sub>, PM<sub>10</sub>, Nitrogen Dioxide (NO<sub>2</sub>), and Ozone (O<sub>3</sub>). In general, strong positive correlations were found between these metrics and the Cardiovascular Disease death rates in California. The collected data will be used in a follow-up research to create an air quality monitor.

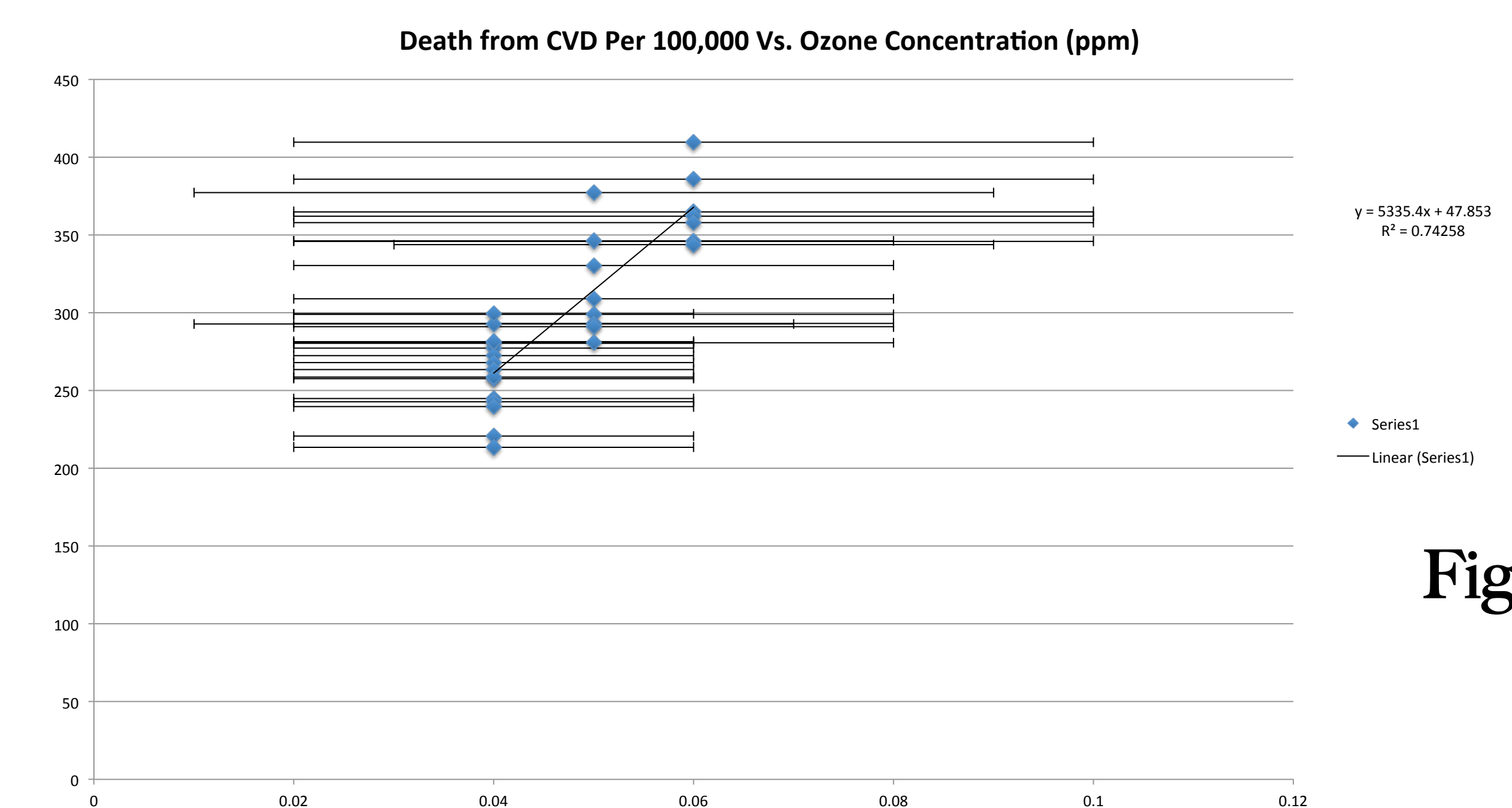
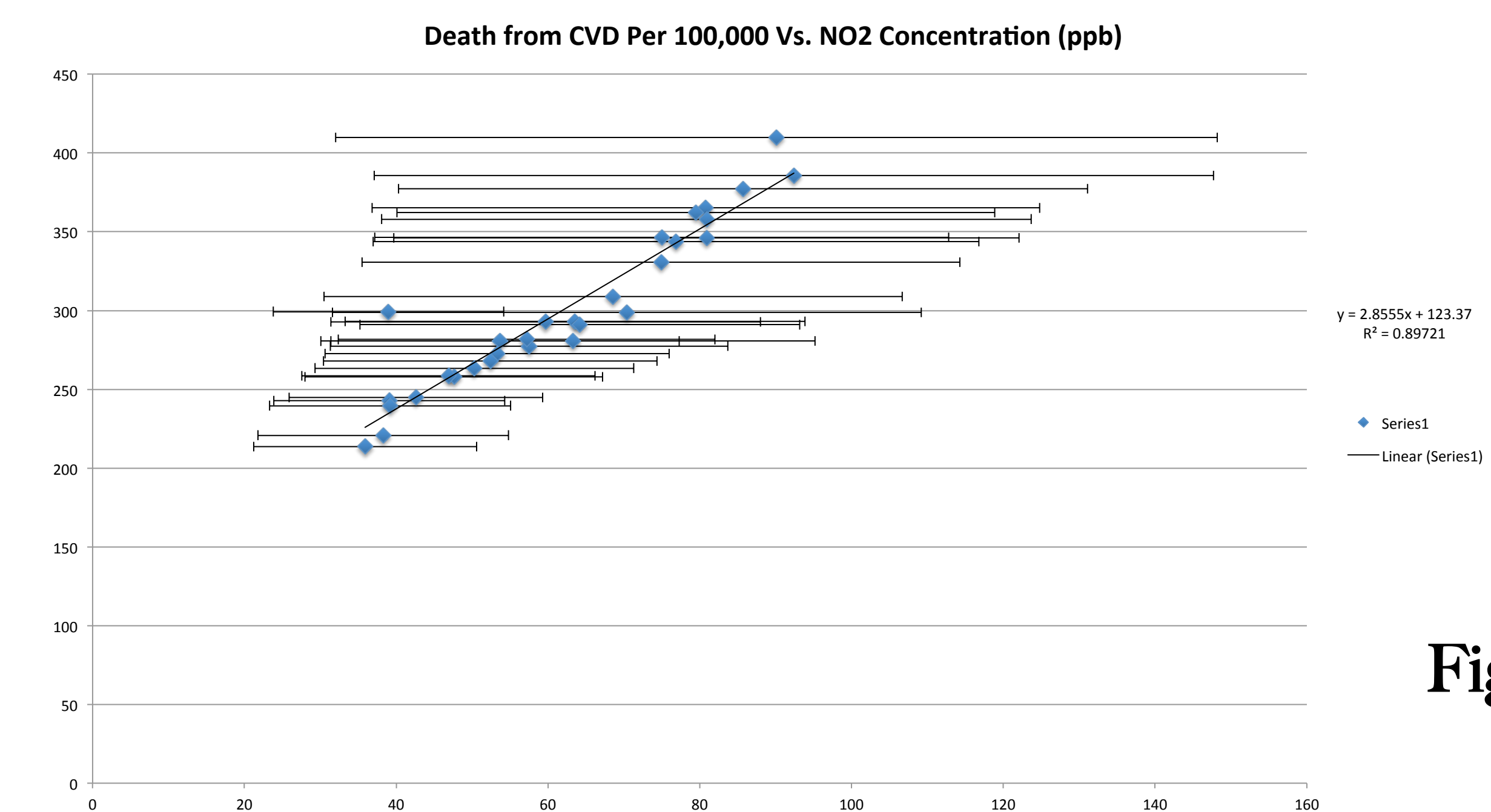
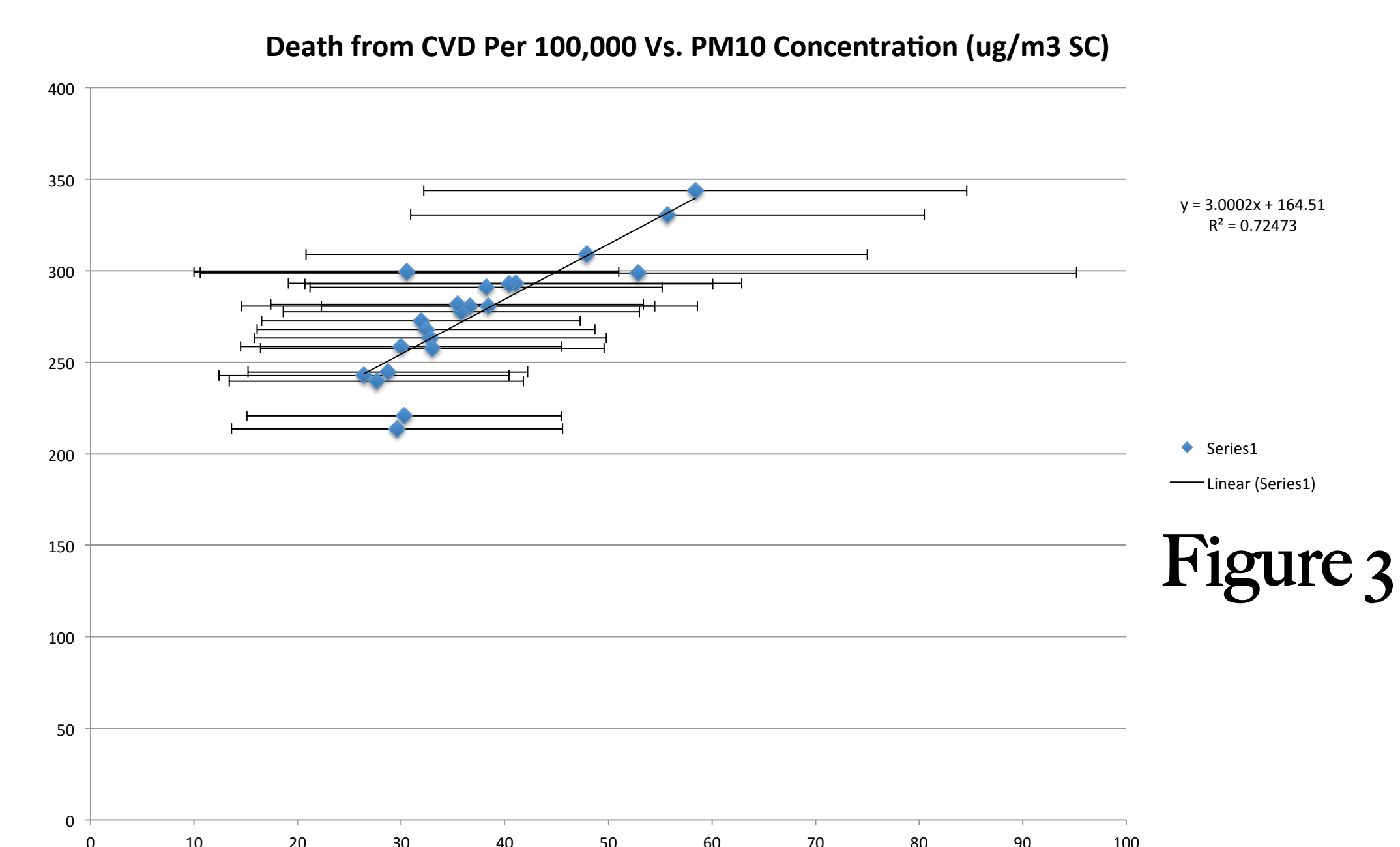
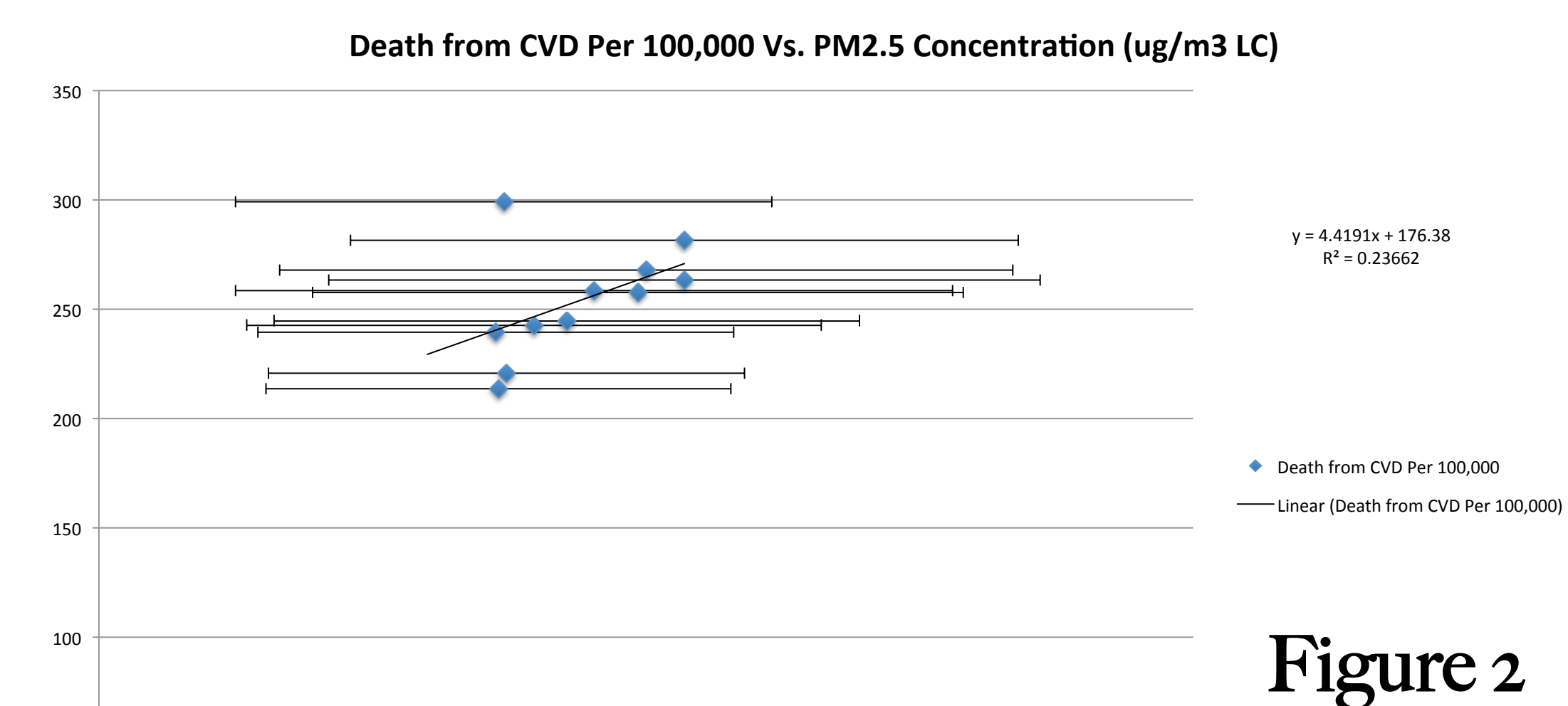
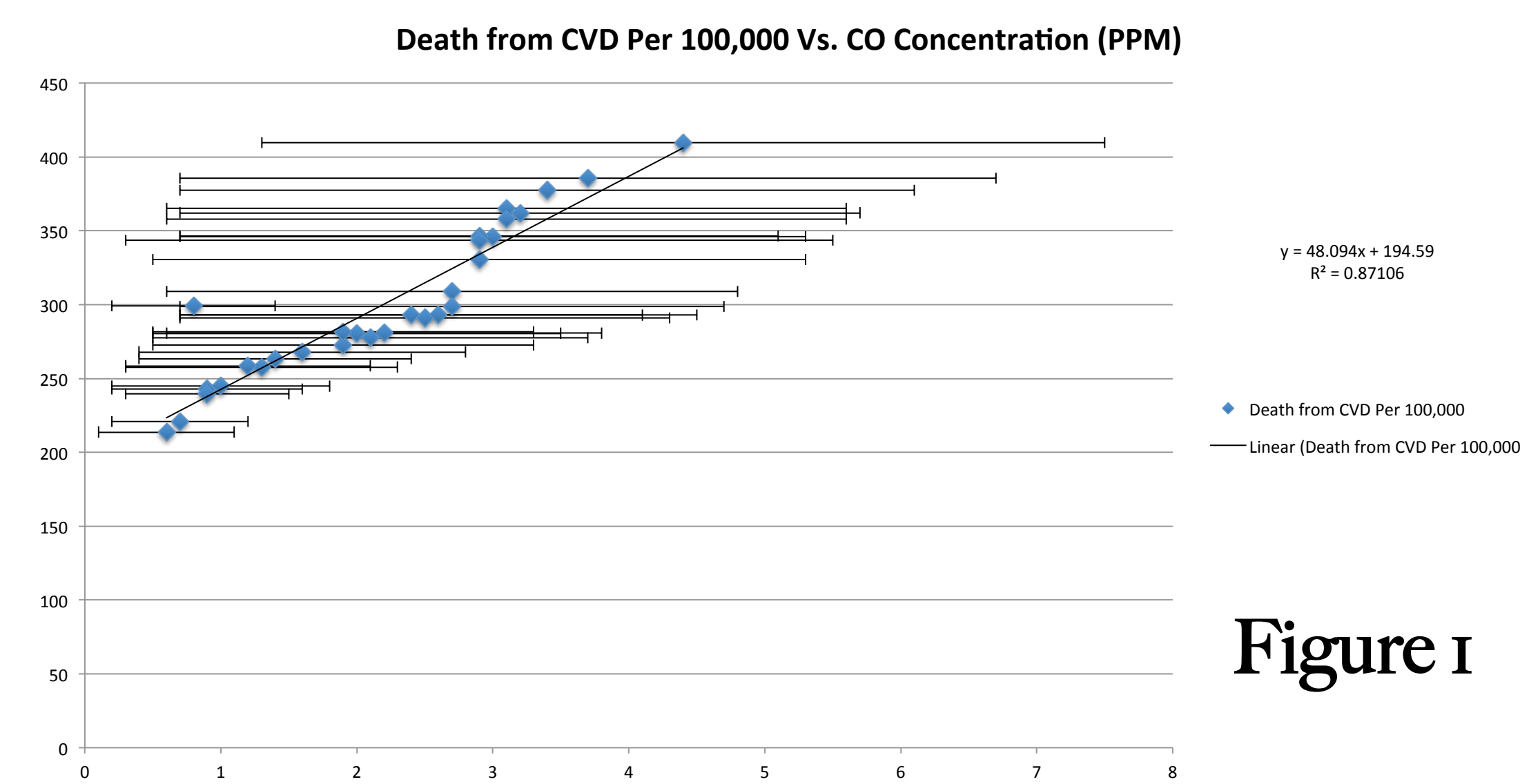
## Introduction

The data collected from this research will be used to spot how strongly correlated Cardiovascular disease rates are to various air pollutants. The independent variables of this study are the averages of the following metrics: (Carbon Monoxide [ppm], PM<sub>2.5</sub> [ug-m<sup>3</sup> LC], PM<sub>10</sub> [ug-m<sup>3</sup> SC], Nitrogen Dioxide [ppb], and Ozone [ppm]) in the Los Angeles County from 1980-2012. The dependent variable is the number of deaths from Cardiovascular disease per 100,000, from 1980-2009. The standard deviation on the air metrics listed above was the error on the dependent variable.

## Experimental Methods

All air metric measurements in this research (Carbon Monoxide [ppm], PM<sub>2.5</sub> [ug-m<sup>3</sup> LC], PM<sub>10</sub> [ug-m<sup>3</sup> SC], Nitrogen Dioxide [ppb], and Ozone [ppm]) were pulled from the EPA's *Download Daily Data* page.

## Results



## Future Directions

In the future, this data will be used in setting up various air quality monitors and gas sensors at Safecast. This research will give grounds to the motivation behind Safecast's goals and future objectives.

## References

1. "Download Daily Data." Epa.gov. EPA, 14 Nov. 2012. Web. 14 Nov. 2012. <[http://www.epa.gov/airdata/ad\\_data\\_daily.html](http://www.epa.gov/airdata/ad_data_daily.html)>.

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